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REMARKS

Claims 1-111 are now pending in the application. Claims 39-109 and 111 have been allowed. Claims 1, 3-7, 13-15, 17-19, 21, 23-27, 31, 34, and 110 have been rejected. Claims 2, 8-12, 16, 20, 22, 28-30, 32, 33, and 35-38 have been objected to. Applicants respectfully request reconsideration of the rejected claims in view of the remarks that follow.

Rejection Under 35 U.S.C. § 102(b) over Krishnan et al.

Claims 1, 3-6, 15, 17-19, 21, 23-27, 31, 34, and 110 have been rejected under section 102(b) as anticipated by the Krishnan et al. patent, U.S. 5,778,789. Applicants respectfully traverse the rejection and request reconsideration of the claims.

The rejected claims are drawn to a lithographic ink composition comprising a continuous phase comprising a hydrogen bonding vinyl polymer and an emulsified phase comprising water, liquid polyol, or both.

The Examiner has argued that the present ink is a "single phase ink." This language does not appear in the claims or in the specification. The present ink is, instead, described as an emulsion. An emulsion, of course has two phases. The present claims explicitly name the two phases -- a continuous phase and an emulsified phase. A composition described as having a continuous phase and an emulsified phase is "an emulsion." See page 461 from *Hawley's,* 12th ed., attached. The premise of the Examiner argument, that "both the present invention and Krishnan et al. utilize single phase ink" is wrong and insupportable by any coherent interpretation of Applicants' claim language.

The Krishnan patent does not describe or disclose an ink composition having a continuous phase containing a vinyl resin and an emulsified phase containing water. Col. 3, lines 23-45 ("25 to 60 wt. %, preferably 35 to 50 wt. %, based on the weight of the ink, of water *which is present as a continuous phase in the ink*") (emphasis added); Example 1. To anticipate, a reference must disclose "each and every element of the claimed invention, arranged as in the claim." *Lindemann Maschinenfabrik GmbH v. American Hoist & Derrick Co.,* 221 U.S.P.Q. 481, 485 (Fed. Cir. 1984). Therefore, the Krishnan patent does not anticipate the present claims.

The Examiner appears to argue that the Krishnan ink is the same ink made by a different method. The present claim, however, requires a continuous phase comprising the vinyl resin and an emulsified phase comprising water, liquid polyol, or both. Applicants disagree that this language could be interpreted as a method step. See *3M Innovative Properties Co. v. Avery Dennison Corp.,* 69 USPQ2d 1050, 1055 (Fed Cir. 2003). Even were it so, however, the product of emulsifying one material in another would still be an emulsion with an emulsified phase and a continuous phase, not a "single phase."

It is difficult to understand why the Examiner would assert that a composition with water as continuous phase is identical to a composition with water as an emulsified phase. Nonetheless, each limitation must be met before there is anticipation. The present ink, having a continuous phase comprising the vinyl polymer and an emulsified phase comprising water, liquid polyols, or both, is neither "a single phase ink" nor an ink with an aqueous continuous phase. An oil-in-water emulsion is not identical to a water-in-oil emulsion.

Further, the Examiner will recall from Applicants' last reply that the ink of the invention behaves differently from the Krishnan ink. A composition and its properties are inseparable. The Krishnan ink has properties such that it cannot be printed lithographically using a conventional plate. This property is part and parcel of the Krishnan ink, not a process step. The present ink, on the other hand, would not print lithographically using the Krishnan silicone plate and instead requires a conventional-type plate with hydrophobic print areas and hydrophilic nonprint areas.

None of the rejected claims are anticipated by the Krishnan patent because the Krishnan patent does not disclose a lithographic ink composition comprising a continuous phase comprising a hydrogen bonding vinyl polymer and an emulsified phase comprising, water, liquid polyol, or both. Accordingly, Applicants respectfully request withdrawal of this rejection and reconsideration and allowance of the claims.

Rejection Under 35 U.S.C. § 103(a) over Krishnan et al. in view of JP 08108662

Claims 7 and 13 have been rejected as unpatentable over the Krishnan et al. patent, U.S. 5,778,789 in view of JP 08108662. Applicants respectfully traverse the rejection and request reconsideration of the claims.

Claims 7 and 13 incorporate the limitations of claim 1, which is patentable over the Krishnan patent. The Office Action cites the Japanese reference for allegedly disclosing a lithographic ink using citric acid or tartaric acid to control pH of the ink and using alkali metal salt of nitric, boric, phosphoric, or sulfuric acid for easier removal of the ink from the printing plate. Such additional disclosure, however, does not overcome the deficiencies of the primary Krishnan reference.

Applicants submit, therefore, that the rejected claims are not obvious over the combination of cited references. Accordingly, Applicants respectfully request withdrawal of this rejection and reconsideration and allowance of the claims.

Rejection Under 35 U.S.C. § 103(a) over Krishnan et al. in view of Britton, Jr.

Claim 14 has been rejected as unpatentable over the Krishnan et al. patent, U.S. 5,778,789 in view of the Britton, Jr. patent, U.S. 5,024,700. Applicants respectfully traverse the rejection and request reconsideration of the claims.

As in the case of claims 7 and 13, claim 14 is patentable over the cited references because the primary reference of the Krishnan patent fails to disclose a lithographic ink comprising a continuous phase comprising a hydrogen bonding vinyl polymer and an emulsified phase comprising, water, liquid polyol, or both. Therefore, claim 14 is patentable over the combination regardless of whether the Britton, Jr. patent discloses the use of triethanolamine or whether or not the motivation alleged in the Office Action would hold for the Krishnan ink or be sufficient to one of ordinary skill in the art.

Applicants submit the rejected claims are not obvious over the cited references. Accordingly, Applicants respectfully request withdrawal of this rejection and reconsideration and allowance of the claims.

Conclusion

Applicants note with appreciation the Examiner's determination that claims 39-109 and 111 are allowable and that claims 9-12, 16, 20, 22, 28-30, 32, 33, and 35-38 are drawn to allowable subject matter.

It is believed that all of the stated grounds of rejection have been properly traversed, accommodated, or rendered moot. Applicant therefore respectfully requests that the Examiner reconsider and withdraw all presently outstanding rejections. It is believed that a full and complete response has been made to the outstanding Office Action, and as such, the present application is in condition for allowance. Thus, prompt and favorable consideration of this amendment is respectfully requested.

If the Examiner believes that personal communication will expedite prosecution of this application, the Examiner is invited to telephone the undersigned at (248) 641-1600.

Respectfully submitted,

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Hawley's

Condensed Chemical

Dictionary

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Richard J. Lewis, Sr.

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from beryllium aluminum silicate containing a small amount of chromium.
Use: Lasers, masers, semiconductors.

emery. See corundum, abrasive.

emetine. (cephaeline methyl ether; 6',7',10,11-tetramethoxyemetan). CAS: 483-18-1. $C_{29}H_{40}O_4N_2$. An alkaloid from ipecac.
Properties: White powder, mp 74C, very bitter taste, darkens on exposure to light, soluble in alcohol and ether, slightly soluble in water.
Derivation: By extraction from root of *Cephalis ipecacuanha* (ipecac) or synthetically.
Hazard: Toxic by ingestion.
Use: Medicine (antiamebic).

emission spectroscopy. Study of the composition of substances and identification of elements by observation of the wavelengths of radiation they emit as they return to a normal state after excitation by an external energy source. When atoms or molecules are excited by energy input from an arc, spark, or flame, they respond in a characteristic manner; their identity and composition are signaled by the wavelengths of incident light they emit. The spectra of elements are in the form of lines of distinctive color, such as the yellow sodium D line of sodium; those of molecules are groups of lines called bands. The number of lines present in an emission spectrum depends on the number and position of the outermost electrons and the degree of excitation of the atoms. The first application of emission spectra was identification of sodium in the solar spectrum (1814).
See also spectroscopy.

emmenagogue. A drug used to induce menstruation.

Emmert reaction. Formation of 2-pyridyldialkylcarbinols by condensation of ketones with pyridine or its homologs in the presence of aluminum or magnesium amalgam.

emodin. (frangula emodin; frangulic acid; 1,3,8-trihydroxy-6-methylanthraquinone). CAS: 518-82-1. $C_{14}H_4O_2(OH)_3CH_3$.
Occurrence: Either free, or combined with a sugar in a glucoside, in rhubarb, cascara sagrada, and other plants. A synthetic product is also available.
Properties: Orange crystals, mp 256C, soluble in alcohol, insoluble in water.
Use: Medicine (cathartic).

empirical formula. See formula, chemical.

EMTS. Abbreviation for ethylmercury-p-toluene sulfonanilide.

emulsifier. A surface-active agent.
See emulsion.

emulsifying oil. See soluble oil.

"Emulsilac-S" [*Humko*]. (sodium stearoyl lactylate). TM for emulsifier, dough conditioner-strengthener, and whipping agent.
Use: For baked goods, puddings, dips, cheese substitutes, sauces, whipped toppings, and fillings.

emulsion. (synaptase; amygdalase; β-glucosidase). An enzyme catalyzing the production of glucose from β-glucosides.
Properties: White powder, odorless and tasteless, capable of hydrolyzing glucosides such as amygdalin to glucose and the other component substances. Soluble in water, insoluble in ether and alcohol.
Source: Sweet almonds.
Derivation: By extracting an emulsion of almonds with ether filtering the clear solution and precipitating the emulsion with alcohol.

emulsion. A stable mixture of two or more immiscible liquids held in suspension by small percentages of substances called emulsifiers. These are of two types: (1) Proteins or carbohydrate polymers which act by coating the surfaces of the dispersed fat or oil particles, thus preventing them from coalescing; these are sometimes called protective colloids. (2) Long-chain alcohols and fatty acids; which are able to reduce the surface tension at the interface of the suspended particles because of the solubility properties of their molecules. Soaps behave in this manner; they exert cleaning action by emulsifying the oily components of soils. All such substances, both natural and synthetic, are known collectively as detergents.

Polymerization reactions are often carried out in emulsion form; a wide variety of food and industrial products are emulsions of one kind or another, e.g., floor and glass waxes, drugs, paints, shortenings, textile and leather dressings, etc.

All emulsions consist of a continuous phase and a disperse phase: in an oil-in-water (o/w) emulsion, such as milk, water is the continuous phase and butterfat (oil) the disperse phase; in a water-in-oil (w/o) emulsion, such as butter, free fat (from crushed fat globules) is the continuous phase and unbroken fat globules plus water droplets are the disperse phase.
See also colloid, protective; phase (2); detergent; surface-active agent; wetting agent.

emulsion breaker. See demulsification.

emulsion paint. See paint, emulsion.